

REMARKS

Claims 16 and 27-28 are currently being amended to further particularly point out and distinctly claim the subject matter which Applicant regards as the inventive subject matter. Basis for the amendments can be found on page 7, lines 6-13, of Applicant's International Application Publication specification (i.e., WO 2004/056878). Additionally, claims 20-24, 26, and 29 are currently being cancelled without any prejudice or disclaimer to the subject matter expressed therein.

The amendments herein do not introduce new matter within the meaning of 35 U.S.C. §132. Accordingly, entry of the amendments is respectfully requested.

1. Interview

Applicant kindly thanks the Examiner for interviewing this case on April 11, 2008. The substance of the interview is discussed below, as well as throughout this response.

In particular, as discussed during the interview, Applicant has amended each independent claim to incorporate a long chain branching rate of from 0.001 to 0.09 Lcb/1000 carbon atoms. Accordingly, in light of the current amendments, as well as the discussion below, Applicant respectfully believes the claims are patentably distinct over the cited documents, and are in condition for allowance.

2. Objection of Claims 20-21 and 23-25

The Office Action states,

Claims 20, 21, 23, 24, and 25 are objected to because of the following informalities: The claims indicate that the at least one activating compound is optional. There is no evidence in the record to suggest that active catalysts containing the claimed metallocene do not contain at least one activating species. Appropriate correction is required.

RESPONSE

Claims 20, 21, and 23-25 has been cancelled rendering the objections thereto moot. Accordingly, Applicant respectfully requests the Examiner to withdraw the current objection.

2. Rejection of Claims 16-18 and 27 Under 35 U.S.C.

§102(b)/103(a)

The Office Action states,

Claims 16-18, 27 and 28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kale et al. (U.S. 6,420,507).

Kale et al. teaches a series of ethylene/octene copolymer exhibiting a density of about 0.870 g/cm³, M_n on order of about 44,000-57,000, and M_w/M_n in the range of about 2.2-2.8 (see entries 1a-c and 2a-d in tables 2 and 5). Copolymers prepared from these catalysts also exhibit bimodal short chain branching distribution (col. 54, line 36; Table 6 shows the presence of two distinct product fractions). Furthermore, polymers are characterized by having at least 0.04 vinyl groups/1000 C atoms (col. 40, lines 40-42). The reference is silent with regard to the CDBI and side chain branching per 1000 carbon atoms, however, light of the fact that the copolymer exhibits essentially the same properties and in view of the fact

that the branching distribution is bimodal, a reasonable basis exists to believe that the claimed broad CDBI and side chain branching range is associated with bimodal distribution,¹ and therefore, these properties are also exhibited by the polymers of Kale et al. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

Preparation of blend is disclosed in Kale et al. (col. 6, line 50), and inventive polymers find utility in fibers, films, and molded articles (col. 6, line 6).

¹ A CDBI of less than 50% indicates that the amount of comonomer incorporated into each polymer chain varies over a broad range. That is, the branching distribution is non-uniform, and the value is associated with a broad short chain branching distribution.

RESPONSE

Applicant respectfully traverses the rejection of claims 16-18 and 27-28.

Anticipation:

For a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claims is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The **identical** invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), (Emphasis added). The elements must also be arranged as

required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicant respectfully believes U.S. Patent 6,420,507 (referred to herein as "Kale, et al.") fails to disclose, teach, or suggest, "A copolymer of ethylene with α -olefins which comprises a molar mass distribution M_w/M_n of from 1 to 8, a density of from 0.85 to 0.94 g/cm³, a molar mass M_n of from 10,000 g/mol to 4,000,000 g/mol, a CDBI of less than 50%, a vinyl group content of from 0.1 to 1 vinyl groups/1000 carbon atoms, a Lcb rate of from 0.001 to 0.09 Lcb/1000 carbon atoms, the copolymer comprising at least a bimodal short chain branching distribution, and wherein a side chain branching of the maxima of the individual peaks of the short chain branching distribution, as determined by crystallization analysis fractionation (CRYSTAF), of the copolymer of ethylene and the α -olefins is greater than 5 CH₃/1000 carbon atoms."

In particular, as outlined in Applicant's previous response of July 19, 2007, Applicant respectfully believes Kale, et al. fails to disclose, teach, or suggest the currently claimed ethylene copolymers comprising, at the very least, a vinyl group content of from 0.1 to 1 vinyl groups/1000 carbon atoms. See pages 12-17 in Applicant's response of July 19, 2007. Notwithstanding, as discussed during the interview of April 11, 2008, Applicant has amended each independent claim to recite the currently claimed ethylene copolymers comprise, in part, a Lcb rate of from 0.001 to 0.09 Lcb/1000 carbon atoms.

With respect to the instant rejection, Kale, et al. discloses

in col. 40, lines 43-47,

The polymers of the invention will preferably be characterized as having long chain branching, preferably from 0.01 to 3.0 long chain branches/1000 carbons.

Accordingly, Applicant respectfully believes the current anticipation rejection should be withdrawn.

Obviousness:

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

Arguments regarding Kale, et al. *supra* are incorporated herein by reference in their entirety. Accordingly, Applicant respectfully

believes Kale, et al. does not render obvious Applicant's currently pending claims.

In particular, as outlined above, Applicant believes Kale, et al. does not teach, disclose, or suggest Applicant's current claimed ethylene copolymers comprising at the very least, a vinyl group content of from 0.1 to 1 vinyl groups/1000 carbon atoms and a Lcb rate of from 0.001 to 0.09 Lcb/1000 carbon atoms.

Additionally, as discussed during the interview of April 11, 2008, since Kale, et al. does not disclose, teach, or suggest Applicant's currently claimed ethylene copolymers, and there is no suggestion or motivation to modify Kale, et al., nor would there be any expectation of success in modifying Kale, et al., Applicant respectfully believes the currently pending claims are unobvious in view of Kale, et al. As such, Applicant respectfully believes the current obviousness rejection should be withdrawn.

In light of the above, claims 16-18 and 27-28 are therefore believed to be patentable over Kale, et al. Accordingly, reconsideration and withdrawal of the rejection is requested.

3. Rejection of Claims 16-22, 24, and 29 Under 35 U.S.C. §103(a)

The Office Action states,

Claims 16-22, 24, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mihan et al. (WO 01/12641); equivalent U.S. 6,437,161 relied upon for translation and pagination).

Mihan et al. teaches a general catalyst system comprising (un)substituted monocyclopentadienyl chromium (III)

complexes. The transition metal component has structure defined by structural components (I) and (II), as shown in claim 1. One notes that the π -ligand has bridging group B and pendant moiety Z. The bridging group is of formula $L^2(R^{13})(R^{14})$ where L^2 is carbon or silicon. Pendant Z is a heterocyclic moiety, and one finds in column 5 that Z is an 8-quinolyl group and substituted derivatives thereof (col. 6, lines 10-12). Mihan *et al.* shows a working example of a catalyst containing the compounds (8-quinolyl)(Ind)CrCl₂ and (2-Me-8-quinolyl)(Me₄C₅)CrCl₂ (examples 8 and 9.) There is no working example in which chromium complexes contain a bridging group.

Despite this, one learns in col. 4, lines 25-37 that if Z is a fused heterocyclic or heteroaromatic ring system, then B is $L^2(R^{13})(R^{14})$ where L^2 is carbon or silicon. Proceeding further, the skilled artisan learns that the combination of B as C(CH₃)₂ or Si(CH₃)₂ with 8-quinolyl is preferred (col. 6, lines 25-31). Thus, it would have been obvious to one having ordinary skill in the art, having examples 8 and 9 as guidance, to make a catalyst comprising [Me₂Si(8-quinolyl)(Ind)]CrCl₂, [Me₂C(8-quinolyl)(Ind)]CrCl₂, and their corresponding 2-methylindenyl analogues, because the prior art teaches these preferred embodiments. In summary, it would have been obvious to one having ordinary skill in the art to make the catalyst of instant claims 21 and 22 from the complete disclosure of Mihan *et al.*

Catalysts of the invention are especially useful for making ethylene/C₃-C₁₂ alpha olefin copolymers (col. 10, line 16). Since the inventors teach this particular application, it would have been obvious to one having ordinary skill in the art to use the catalyst containing [Me₂Si(8-quinolyl)(Ind)]CrCl₂, [Me₂C(8-quinolyl)(Ind)]CrCl₂, or their corresponding 2-methylindenyl analogues, for making ethylene/alpha olefin copolymers. That is, it would have been obvious to one having ordinary skill in the art to carry out the process of instant claims 20 and 29 from the disclosure of Mihan *et al.*

The prior art is silent regarding the properties associated with ethylene/C₃-C₁₂ alpha olefin copolymers prepared from the catalysts cited above, however, in light of the fact that the catalyst is essentially the same as that recited in the instant claims, it follows that products prepared from the same catalyst in essentially the same process exhibit essentially the same

properties. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

RESPONSE

Claims 20-22, 24, and 29 have been cancelled rendering the rejections thereto moot. Notwithstanding, Applicant respectfully traverses the rejection of claims 16-19.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

Applicant respectfully believes WO 01/12641, which is

equivalent to U.S. 6,437,161, and used for herein for translation and pagination purposes, (herein collectively referred to as "Mihan, et al.") does not disclose, teach, or suggest Applicant's currently claimed copolymer of ethylene with α -olefins which comprises a molar mass distribution M_w/M_n of from 1 to 8, a density of from 0.85 to 0.94 g/cm³, a molar mass M_n of from 10,000 g/mol to 4,000,000 g/mol, a CDBI of less than 50%, a vinyl group content of from 0.1 to 1 vinyl groups/1000 carbon atoms, a Lcb rate of from 0.001 to 0.09 Lcb/1000 carbon atoms, the copolymer comprising at least a bimodal short chain branching distribution, and wherein a side chain branching of the maxima of the individual peaks of the short chain branching distribution, as determined by crystallization analysis fractionation (CRYSTAF), of the copolymer of ethylene and the α -olefins is greater than 5 CH₃/1000 carbon atoms.

In particular, at the very least, Applicant believes Mihan, et al. does not teach, disclose, or suggest Applicant's current claimed ethylene copolymers comprising **a CDBI of less than 50%**.

The Examiner states on page 5, line 22 - page 6, line 8, of the current Office Action,

Catalysts of the invention are especially useful for making ethylene/C₃-C₁₂ alpha olefin copolymers (col. 10, line 16). Since the inventors teach this particular application, it would have been obvious to one having ordinary skill in the art to use the catalyst containing [Me₂Si(8-quinoliny)(Ind)]CrCl₂, [Me₂C(8-quinoliny)(Ind)]CrCl₂, or their corresponding 2-methylindenyl analogues, for making ethylene/alpha olefin copolymers. That is, it would have been obvious to one having ordinary skill in the art to carry out the process of instant claims 20 and 29 from the disclosure of Mihan et al.

The prior art is silent regarding the properties associated with ethylene/C₃-C₁₂ alpha olefin copolymers prepared from the catalysts cited above, however, in light of the fact that the catalyst is essentially the same as that recited in the instant claims, it follows that products prepared from the same catalyst in essentially the same process exhibit essentially the same properties. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In fact, Mihan, et al. discloses in col. 16, line 65 - col. 17, line 63 the preparation of 1-(8-quinolyl)indenylchromium(III) dichloride (i.e., Example 8), as well as ethylene polymerization processes using 1-(8-quinolyl)indenylchromium(III) dichloride. See Table 1, Examples 21-27; Example 28; Table 2, Examples 35-45; Table 3, Example 56; and Table 4, Examples 59-60. In particular, in Examples 36-41 in Table 2, 1-(8-quinolyl)indenylchromium(III) dichloride is used to copolymerize ethylene and hexene.

However, as discussed during the interview of April 11, 2008, and as evidenced by WO 01/12687, which is equivalent to U.S. Patent 6,911,516 and used for herein for translation and pagination purposes, (herein collectively referred to as "Mihan, et al. II"), Mihan, et al. II discloses 1-(8-quinolyl)indenylchromium(III) dichloride is used to co-polymerize ethylene and hexene, and the resultant copolymer comprises a **CDBI greater than 90%**. See Table 1, Examples 2 and 3 in Mihan, et al. II. Accordingly, Applicant respectfully traverses the Examiner's contention, ". . . it follows

that products prepared from the same catalyst in essentially the same process exhibit essentially the same properties."

In light of the above, claims 16-19, and 27-28 are therefore believed to be patentable over Mihan, et al. Accordingly, reconsideration and withdrawal of the rejection is requested.

4. Rejection of Claims 21 and 22 Under 35 U.S.C. §102(b)/103(a)

The Office Action states,

Claims 21 and 22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wang (WO 01/92346; equivalent document U.S. 6,723,675).

Wang teaches a catalyst comprising the bridged chromium complex, $[(2\text{-quinoliny})\text{methyl}](\text{C}_5\text{Me}_4)\text{CrCl}_2$ (compounds VI), *inter alia* (col. 3, line 33 - col. 4, line 27, particularly, col. 3, line 52; R^2 and R^3 are linked to form an indenyl group). It is clear that prior art teaches a catalyst containing chromium complexes having the structural features recited in the claims. Therefore, the subject matter of claims 21 and 22 is anticipated by Wang. Catalysts of the invention are used to make ethylene/ $\text{C}_3\text{-C}_{20}$ alpha olefin copolymers (claim 12). The prior art is silent regarding the properties associated with ethylene/ $\text{C}_3\text{-C}_{20}$ alpha olefin copolymers prepared from the catalysts cited above, however, in light of the fact that the catalyst is the same as that recited in the instant claims, it follows that products prepared from the same catalyst exhibit the same properties. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

RESPONSE

Claims 21 and 22 have been cancelled rendering the rejection thereto moot. Accordingly, Applicant respectfully requests the

Examiner to withdraw the current rejection.

5. Rejection of Claim 24 Under 35 U.S.C. §102(b)/103(a)

The Office Action states,

Claim 24 is also rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wang.

The discussion of the disclosures of the prior art from the previous paragraph of this office action is incorporated here by reference. The prior art teaches the catalyst recited in claim 24, and the reference teaches that catalysts are used for preparing ethylene/C₃-C₂₀ alpha olefin copolymers. Based on these facts, it is deemed that the disclosure of Wang, taken as a whole, teaches a process comprising essentially the same step recited in instant claim 24. It follows that ethylene/C₃-C₂₀ alpha olefin copolymers prepared by essentially the same process using the same catalyst will exhibit essentially the same properties, and therefore, it is maintained that ethylene/C₃-C₂₀ alpha olefin copolymers prepared by the catalyst of Wang inherently possesses the properties recited in the claims. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

RESPONSE

Claim 24 has been cancelled rendering the rejection thereto moot. Accordingly, Applicant respectfully requests the Examiner to withdraw the current rejection.

6. Rejection of Claims 16-19, 20, and 29 Under 35 U.S.C.

§102(b)/103(a)

The Office Action states,

Claims 16-19, 20, 29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wang.

Wang teaches a catalyst containing the bridged complex, (2-pyridylmethyl)(Ind)CrCl₂ (compound 5). This compound possesses structural features that meet the structural features set forth in the instant claims. Catalysts of the invention are used in a process of polymerizing ethylene and C₃-C₂₀ α-olefin (claim 12). Based on these facts, it is deemed that the disclosure of Wang, taken as a whole, teaches a process comprising the same catalyst and essentially the same step recited in instant claims 20 and 29. It follows that ethylene/C₃-C₂₀ alpha olefin copolymers prepared by essentially the same process using the same catalyst will exhibit essentially the same properties, and therefore, it is maintained that ethylene/C₃-C₂₀ alpha olefin copolymers prepared by the catalyst of Wang inherently possesses the properties recited in claims 16-20. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

The subject matter of claim 28 is disclosed in column 3, line 10, in which Wang *et al.* teaches molded articles and films as end use for inventive polymers.

RESPONSE

Claims 20 and 29 have been cancelled rendering the rejection thereto moot. Notwithstanding, Applicant respectfully traverses the rejection of claims 16-19.

Since anticipation is an absolute epitome of obviousness, if a claim is unobvious, it necessarily is not anticipated. Additionally, the U.S. Supreme Court in *Graham v. John Deere Co.*,

148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

With respect to the current rejection, Applicant respectfully believes Wang, et al. does not render obvious the currently pending claims. In particular, the Examiner is relying on the catalyst in Example 5 (i.e., 2-pyridylmethyl(Ind)CrCl₂) in Wang, et al. in an attempt to render obvious Applicant's currently claimed ethylene copolymers.

However, as outlined in Applicant's previous response of July 19, 2007, the catalyst of Example 5 in Wang, et al. was used to produce ethylene **homopolymers** having a **density of 0.955 g/cc** and a **MWD of 10.6**, whereas Applicant is currently claiming, ethylene

copolymers comprising a molar mass distribution M_w/M_n of from 1 to 8, and a **density of from 0.85 to 0.94 g/cm³**.

Accordingly, for this reason alone, Applicant respectfully believes the current rejection should be withdrawn.

Notwithstanding, during the interview of April 11, 2008, Applicant respectfully pointed out to the Examiner Applicant's specification comprises Comparative example 1, which is the same compound listed as Example 1 in Wang, et al. (i.e., 5-[(2-pyridyl)methyl]-1,2,3,4-tetramethylcyclopentadienylchromium dichloride). Additionally, Applicant noted to the Examiner the aforementioned compound produced a **monomodal** ethylene copolymer, having a **CDBI greater than 50%**, whereas Applicant is currently claiming a **bimodal** ethylene copolymer comprising a **CDBI less than 50%**. See Table 1, C1, in Applicant's specification.

However, the Examiner has stated in the Interview Summary,

Applicant points to $Cp^*(CH_2)(py)CrCl_2$ which is used to make polymer having CDBI >50 % and monomodal. The result pertains to this compound only, however, Wang, et al. discloses a broad spectrum of compounds including $Cp^*(quinolinyl)$ chromium complexes and chromium complexes containing indenyl ligands. Therefore, the single piece of evidence is insufficient to rebut a prima facie case of obviousness, and it is not commensurate in scope with the extent of protection sought by Applicant.

However, as outlined *supra*, Applicant has supplied the Examiner with evidence that 1-(8-quinolyl)indenylchromium(III) dichloride used to co-polymerize ethylene and hexene produces a copolymer comprising a CDBI greater than 90%, whereas Applicant is currently

claiming an ethylene copolymer comprising, in part, a CDBI less than 50%. See Table 1, Examples 2 and 3 in Mihan, et al. II. Additionally, Applicant has supplied the Examiner with Comparative example 1 in Applicant's specification, which clearly demonstrates the novel and unique properties currently claimed in Applicant's ethylene copolymers. Therefore, Applicant has provided the Examiner with several pieces of evidentiary data demonstrating the novel and unobviousness properties of Applicant's currently claimed ethylene copolymers, whereas the Examiner has not provided a single piece of evidentiary documentation to support the current rejection based on inherency.

In fact, given aforementioned evidentiary data supplied by Applicant, Applicant respectfully believes the rejection based on inherency issued by the Examiner has been more than adequately traversed, and it is now incumbent upon the Examiner to provide some sort of evidence to still support the current rejection based on inherency. See MPEP §2112. Accordingly, if the current rejection is maintained by the Examiner, Applicant respectfully requests the Examiner to explain with factual, objective evidence **why** Wang, et al. would **necessarily**, without possibilities or probabilities, produce Applicant's currently claimed polyethylene copolymers. See *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999), and *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Notwithstanding the above, Applicant still respectfully

traverses the current rejection based on the Examiner's selective plucking of 1-(2-pyridylmethyl)-indenyl chromium (III) dichloride (i.e., compound V) from Wang, et al. In particular, the current Office Action states,

Wang teaches a catalyst containing the bridged complex, (2-pyridylmethyl)(Ind)CrCl₂ (compound 5). This compound possesses structural features that meet the structural features set forth in the instant claims.

However, the Examiner has not explained **why** one would have explicitly chosen the specific catalyst selected by the Examiner from Wang, et al. in view of the fact that Wang, et al. discloses a myriad of other catalysts. In fact, the Examiner admittedly states Wang, et al. discloses an innumerable amount of compounds in the Interview Summary, which states in part,

. . . however, Wang, et al. discloses **a broad spectrum** of compounds. . . . (Emphasis added)

Accordingly, Applicant respectfully believes the Examiner has not articulated and explained **why** one would have specifically selected the catalyst chosen by the Examiner in light of the "broad spectrum" of other compounds disclosed in Wang, et al. However, this is the Examiner's initial burden in establishing a *prima facie* case of obviousness. See MPEP §2141.02 and §2142.

Additionally, even if one would have specifically selected the catalyst chosen by the Examiner, which Applicant adamantly denies, the Examiner still has not explained **why** one would have modified the process of Wang, et al. in conjunction with using the specifically

plucked catalyst selected by the Examiner from Wang, et al. in an attempt to arrive at Applicant's currently claimed ethylene copolymers. In fact, Wang, et al. clearly discloses the ethylene copolymerization processes where conducted using compounds I and II, and **not** compound V as selected by the Examiner. Additionally, Applicant has provided the Examiner with evidentiary data showing if one were to use compound I for ethylene copolymerization, as disclosed in Wang, et al., one would not arrive at Applicant's currently claimed ethylene copolymers, since compound I produces an ethylene copolymer having a **CDBI greater than 50%**. See Comparative example 1, and Table 1 (i.e., C1) in Applicant's specification. However, again as with above, this is the Examiner's initial burden in establishing a *prima facie* case of obviousness. See MPEP §2141.02 and §2142.

Accordingly, should the Examiner maintain the current rejection, the Examiner is respectfully requested to explain: (i) **why**, with factual, objective evidence, one having ordinary skill in the art would have selected the specifically cited catalyst from Wang, et al., and not one of the other myriad of other catalysts disclosed in Wang, et al.; (ii) **why**, with factual, objective evidence, one having ordinary skill in the art would have modified the process of Wang, et al. in an attempt to arrive at Applicant's currently claimed ethylene copolymers; and (iii) **why**, with factual, objective evidence, one having ordinary skill in the art would have expected such a modification to the process of Wang, et al. to be

successful.

In light of the above, claims 16-19 and 27-28 are therefore believed to be patentable over Wang, et al. Accordingly, reconsideration and withdrawal of the rejection is requested.

7. Rejection of Claim 23 Under 35 U.S.C. §102(b)/103(a)

The Office Action states,

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Welch et al. (U.S. 5,498,581).

Wang contemplates that inventive catalysts may be in the form of prepolymer (page 10, lines 22-29), but there is not teaching as to how this type of catalyst is made. Welch et al. teaches that 5-80 wt % of prepolymer relative to the mass of resulting prepolymerized solid catalyst system is a practical working range for transition metal catalyzed olefin polymerizations. It would have been obvious to one of ordinary skill in the art to make the claim prepolymer catalyst system because Wang contemplates such an embodiment, and one skilled in the art would have found it obvious to use the amount taught by Welch et al. in making the prepolymer of Wang because Welch et al. furnishes an otherwise obvious missing element. Since this has been shown to produce useful catalysts, the skilled artisan would have expected such an embodiment to work. In sum, the claimed prepolymerized catalyst is obvious over Wang in view of Welch et al.

Catalysts of the invention are used to make ethylene/C₃-C₂₀ alpha olefin copolymers. The prior art is silent regarding the properties associated with ethylene/C₃-C₂₀ alpha olefin copolymers prepared from the catalysts cited above, however, in light of the fact that the catalyst is essentially the same as that recited in the instant claims, it follows that products prepared from essentially the same catalyst exhibit essentially the same properties. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA

1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

RESPONSE

Claim 23 has been cancelled rendering the rejection thereto moot. Accordingly, Applicant respectfully requests the Examiner to withdraw the current rejection.

CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the references of record. The Examiner is therefore respectfully requested to reconsider and withdraw all rejections, and allow all pending claims 16-19 and 27-28. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

The Examiner is welcomed to telephone the undersigned practitioner with any questions or comments.

Respectfully submitted,

By: 

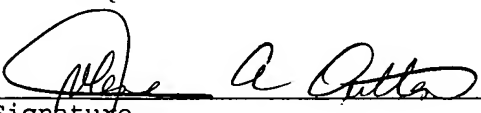
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